

REMARKS

In view of the above amendments and following remarks, reconsideration and further examination are requested.

The specification and abstract have been reviewed and revised to make editorial changes thereto and generally improve the form thereof, and a substitute specification and abstract are provided. No new matter has been added by the substitute specification and abstract.

Claims 1 and 5-23 have been amended; claims 2-4 and 24-51 have been cancelled; and claim 52 has been added. The currently pending claims have been drafted or amended taking into account the 35 U.S.C. § 112, second paragraph, issue raised by the Examiner, are believed to be free of this issue and are otherwise believed to be in compliance with 35 U.S.C. § 112, second paragraph.

Claims 1, 2, 4, 5, 9 and 13 were rejected under 35 U.S.C. § 102(e) as being anticipated by Nakamura et al. Claims 3, 11 and 12 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Nakamura et al. in view of Steere, Jr. et al. Claims 5-8 and 10 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Nakamura et al. in view of Sandvold. Claims 14 and 15 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Nakamura et al. in view of Hongo et al. Claims 16 and 17 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Nakamura et al. in view of Hongo et al., and further in view of Sekine et al. Claims 18-21 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Nakamura et al. in view of Boggs et al. And, claims 22 and 23 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Nakamura et al. in view of Chao et al.

The currently presented claims are believed to be allowable for the following reasons.

Claim 1 has been amended so as to more clearly define the present invention and further define around the references relied upon by the Examiner. In this regard, the subject matter of former claims 2-4 has been incorporated into claim 1, and claim 1 recites additional limitations so as to define around the references relied upon. In this regard, claim 1 now recites

A substrate processing apparatus for polishing a substrate, said substrate processing apparatus comprising:

a loading/unloading stage on which a cassette having a plurality of substrates is to be placed;

a polishing unit for polishing a substrate, said polishing unit including

(i) an edge-portion polisher for pressing a first polishing tape against an edge portion of the substrate and causing relative movement between the first polishing tape and the substrate to polish the edge portion of the substrate;

(ii) a bevel-portion polisher for pressing a second polishing tape against a bevel portion of the substrate and causing relative movement between the second polishing tape and the substrate to polish the bevel portion of the substrate,

(iii) a notch polisher for pressing a third polishing tape against a notch formed in the substrate and causing relative movement between the third polishing tape and the substrate to polish the notch of the substrate, and

(iv) a cleaning device for conducting a primary cleaning of a polished substrate;

a transfer robot for transferring a substrate between a cassette, when on said loading/unloading stage, and said polishing unit; and

an air supply system for supplying air so that pressure of said loading/unloading stage is greater than pressure of said polishing unit.

Such a substrate processing apparatus is not taught or suggested by any of the references relied upon by the Examiner.

In this regard, Nakamura et al. discloses a polishing unit for polishing a periphery of a wafer 90 (FIG. 1B) and a diamond grinding wheel 8 for polishing a notch N of the wafer 90 (FIG. 2A). However, Nakamura et al. does not disclose a loading/unloading stage on which a cassette having a plurality of substrates is placed, and accordingly, Nakamura et al. fails to teach or suggest an air

supply system for supplying air so that pressure of the loading/unloading stage is greater than pressure of the polishing unit, as required by claim 1.

Additionally, Steere, Jr. et al. discloses a polishing machine 15 for polishing a notch 11 of a wafer 10. The polishing machine 15 has a polishing tape 12 disposed about a resilient backing 13 (FIG. 1). However, Steere, Jr. et al. does not disclose a loading/unloading stage on which a cassette having a plurality of substrates is placed, and accordingly, Steere, Jr. et al. fails to teach or suggest an air supply system for supplying air so that pressure of the loading/unloading stage is larger than pressure of the polishing unit, as required by claim 1.

As for Sandvold, Hongo et al., Sekine et al., Boggs et al., and Chao et al., these references are relied upon as disclosing a pair of clamp members, an image sensor for imaging a region being polished, a photosensor for applying light to a region being polished and detecting light reflected by this region, a controller for detecting a torque value to rotate a substrate on a basis of a signal from a motor for rotating the substrate, and a controller for measuring a tension applied to a polishing tape which is held in sliding contact with a region being polished, respectively. However, Sandvold, Hongo et al., Boggs et al., Sekine et al. and Chao et al. also all fail to resolve the aforementioned deficiency of Nakamura et al.

Thus, claim 1 is allowable over the references relied upon by the Examiner either taken alone or in combination, whereby claims 1 and 5-23 are allowable.

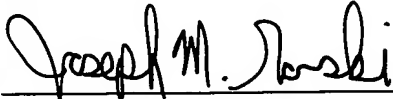
New method claim 52 is also believed to be allowable, because this claim corresponds to apparatus claim 1.

In view of the above amendments and remarks, it is respectfully submitted that the present application is in condition for allowance and an early Notice of Allowance is earnestly solicited.

If after reviewing this Amendment, the Examiner believes that any issues remain which must be resolved before the application can be passed to issue, the Examiner is invited to contact the Applicants' undersigned representative by telephone to resolve such issues.

Respectfully submitted,

Masayuki NAKANISHI et al.

By: 
Joseph M. Gorski
Registration No. 46,500
Attorney for Applicants

JMG/nka
Washington, D.C. 20006-1021
Telephone (202) 721-8200
Facsimile (202) 721-8250
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